

Declaration under 37 C.F.R. § 1.132 by Shozo Shimizu who is currently employed by Nihon Tetra Pak K.K. The Declaration provides evidence that differentiates between the present invention and the compositions taught by the cited references. The claimed compositions of the present invention, made by kneading a hydrophilic reducing organic compound and water insoluble thermoplastic resin, before dispersal in the hydrophobic thermoplastic resin, do not absorb oxygen and suffer ascorbic acid depletion **unless** water is present. Compositions taught by the cited references and combinations thereof do not absorb oxygen and therefore deplete the ascorbic acid even in the absence of water. The Declaration is believed to overcome the prior art rejection in the previous application. Therefore, a notice of allowance is respectfully requested.

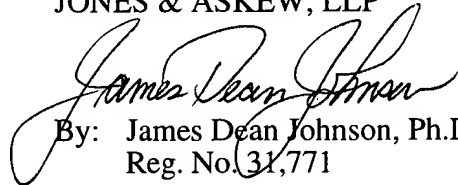
Conclusion

No additional fees are believed due; however, the Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 10-1215.

This Response places all claims in the present application in condition for allowance, and such action is courteously solicited. The Examiner is invited and encouraged to contact the undersigned attorney of record if such contact will facilitate an efficient examination and allowance of the application.

Respectfully submitted,

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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Hara, et al.

Serial No. 08/973,416

Filed: November 14, 1997

For: Resin Composition and Laminate for
Storage of Liquid Food

Art Unit: 1773

Examiner: Kruer, K.

Handwritten signature and initials, possibly "HLS" and "9-20-97".

DECLARATION UNDER 37 C.F.R. §1.132 BY SHOZO SHIMIZU

Commissioner of Patents & Trademarks
Washington, DC 20231

Sir:

I, Shozo Shimizu, do hereby declare:

1. I am a citizen of Japan and a co-worker of the inventors of the above-referenced patent application.
2. I received a Master's Degree in chemistry from Okayama University in 1974.
3. I am currently employed by Nihon Tetra Pak K.K. which belongs to the same group as the group to which Tetra Laval and Holdings & Finance, S.A. belongs. I have been employed by 'Nihon Tetra Pak' for six years.
4. I performed the following experiments, with the results shown in the Table attached herein.

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Preparation and Determination of Oxygen Absorbing Potential of:

Comparative Example A

0.5 parts by weight of ascorbic acid, 9.5 parts by weight of ethylene-vinyl alcohol copolymer (containing ethylene at 47 molar %) and 90 parts of weight of low-density polyethylene (with a density of 0.919g/cm^3) were supplied **simultaneously** to a dual extruder and kneaded **together** to obtain a pellet with the same composition as Embodiment 1 of the specification of the above-referenced application.

50g of received pellet and 10 ml of distilled water were placed in an 80 ml-volume, oxygen-impermeable, cup-shaped container that was then heat sealed with an oxygen impermeable film.

Next, this container was placed in a constant temperature bath at 15°C. The concentration of oxygen was measured with an oxygen micro-analyzer directly after heat sealing, after one week and after two weeks to determine the reduction in the oxygen content and, therefore, the amount of oxygen absorbed.

Comparative Example B

Two (2) parts by weight of ascorbic acid, 8 parts by weight of ethylene-vinyl alcohol copolymer with the 90 parts by weight of low-density polyethylene were used. The process of manufacture of Comparative Example B was the same as that of Comparative Example A. The three components of the composition were added **simultaneously** and kneaded **together**.

The received pellet of Comparative Example B was mixed with water as for Comparative Example A, and the same oxygen absorbing analysis described for Comparative Example A was carried out.

Comparative Example C

One (1) part by weight of ascorbic acid, 9 parts by weight of ethylene-vinyl alcohol copolymer with the 90 parts by weight low-density polyethylene were used. The process of manufacture of Comparative Example C was the same as that of Comparative Example A. The three components of the composition were added **simultaneously** and kneaded **together**.

The received pellet of Comparative Example C was mixed with water as for Comparative Example A, and the same oxygen absorbing analysis described for Comparative Example A was carried out.

Comparative Example D

0.5 part by weight of ascorbic acid, 9.5 parts by weight of poly-vinyl alcohol (KURRAY POVAL®PVA-203) with the 90 parts by weight low-density polyethylene were used. The process of manufacture of Comparative Example D was the same as that of Comparative Example A. The three components of the composition were added **simultaneously** and kneaded **together**.

The received pellet of Comparative Example D was mixed with water as for Comparative Example A and the same oxygen absorbing analysis described for Comparative Example A was carried out.

Comparative Examples A'-D'

The pellets comprising of the compositions of Comparative Examples A-D above were subjected to the same sealing, storing, storage and oxygen absorbing analysis **but without water added**. Comparative Example A' corresponds to Comparative Example A; Comparative Example B' corresponds to Comparative Example B; Comparative Example C' corresponds to Comparative Example C; and Comparative Example D' corresponds to Comparative Example D.

5. In Embodiments 1-3 and Comparative Examples 1-3, as described in the present Specification at pages 15-17 and the Claims, ascorbic acid and the ethylene vinyl alcohol copolymer are kneaded together **before** mixing with a low density polyethylene. On the other hand, in Comparative Examples A-C and A'-C', all three components, namely the organic oxygen scavenger ascorbic acid, ethylene vinyl alcohol and low-density polyethylene, are kneaded together simultaneously.

6. In Embodiments 1-3 of the present specification, and in Comparative Examples A-C, which had distilled water added, similar amounts of oxygen were absorbed after one or two weeks of sealing, when compositions containing the same amount of ascorbic acids are compared. Thus, Embodiment 1 corresponds to Comparative Example A, Embodiment 2 corresponds to Comparative Example B and Embodiment 3 corresponds to Comparative Example C in the content of ascorbic acid.

7. Comparative Examples 1-3 of the present specification and Comparative Examples A'-D' were not mixed with distilled water. In Comparative Examples 1-3 of the present Specification, pellets did not absorb oxygen after one or two weeks. Ascorbic acid, when kneaded with ethylene vinyl alcohol **before** adding to low-density polyethylene, as in the present invention, was not consumed in the absence of water. In Comparative Examples A'-D', however, the compositions and mode of manufacture of which are taught by Logfren, Itamura, Hofedt and Koyama respectively, the pellets absorbed oxygen after one and two weeks of sealing.

8. This data supports the novel and surprising difference between the present invention and the compositions taught by the cited references. The claimed compositions of the present invention, made by kneading a hydrophilic reducing organic compound and water insoluble thermoplastic resin, before dispersal in the hydrophobic thermoplastic resin, do not absorb oxygen and suffer ascorbic acid depletion **unless** water is present. Compositions taught by the cited references and combinations thereof do not absorb oxygen and therefore deplete the ascorbic acid even in the absence of water.

9. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like are made punishable by fine or imprisonment or both under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application or any patent issuing thereon.

July 11, 2000
Date

Shozo Shimuzu
Shozo Shimuzu

Compositions and Method of Manufacture as per the present Specification				Compositions and Method of Manufacture as per the prior art (all three components kneaded together)			
	Immediately after sealing	After one week	After two weeks		Immediately after sealing	After one week	After two weeks
Water Added							
Embodiment 1	0.0	0.7	1.3	Comparative Example A	0.0	0.8	1.4
Embodiment 2	0.0	1.1	2.0	Comparative Example B	0.0	1.3	2.0
Embodiment 3	0.0	2.8	5.2	Comparative Example C	0.0	3.0	5.3
				Comparative Example D	0.0	0.9	1.4
No Water							
Comparative Example 1	0.0	0.0	0.0	Comparative Example A'	0.0	0.4	0.6
Comparative Example 2	0.0	0.0	0.0	Comparative Example B'	0.0	0.6	1.1
Comparative Example 3	0.0	0.0	0.1	Comparative Example C'	0.0	1.6	2.8
				Comparative Example D'	0.0	0.7	1.3

Table shows amounts of oxygen absorbed (ml).
Embodiments 1-3 and Comparative Examples 1-3 are taken from Table 1 of the Specification of the present invention.
Embodiments 1-3 and Comparative Examples A-D used distilled water.
Comparative Examples 1-3 and Comparative Examples A'-D' carried out without distilled water.

